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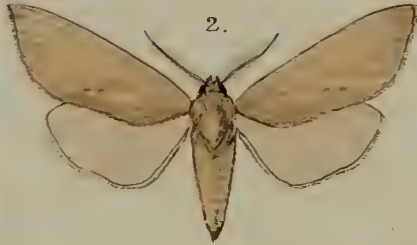
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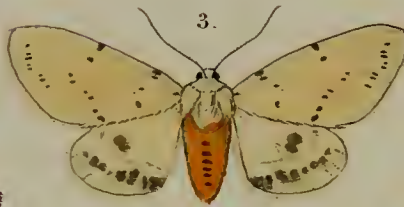
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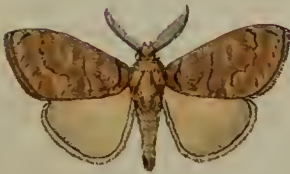
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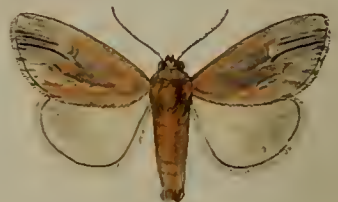
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5. On the Lepidoptera of Bombay and the Deccan.—
HETEROCERA. Part II. By Lt.-Col. C. SWINHOE, F.L.S.,
F.Z.S.

[Continued from p. 148.]

[Received March 5, 1885.]

(Plates XX. & XXI.)

HETEROCERA.

SPHINGIDÆ.

1. CEPHONODES HYLAS.

Sphinx hylas, Linn. Mant. i. p. 539.

Poona, November, February, and March; Sattara, June;
Belgaum; Bombay, July; var. *S. cunninghami* also occasionally
taken in Bombay and Poona.

2. MACROGLOSSA GYRANS.

Macroglossa gyrans, Walker, viii. p. 91.

Poona, May; Bombay.

3. MACROGLOSSA BELIS.

Sphinx belis, Cramer, Pap. Exot. i. pl. 94. f. C.

Belgaum; Sattara, June; Bombay.

4. NEPHELE HESPERA.

Sphinx hespera, Fabr. Sp. Ins. ii. pp. 152-54.

Poona, July, September, October, and November; Sattara, June
and November; Bombay, October, November, and December.

5. PANACRA VIGIL.

Deilephila vigil, Guérin-Ménéville, in Deles. Souv. Voy. dans
l'Inde, pt. ii. p. 80, pl. 23. f. 1 (1843).

Poona, February; Bombay, September.

Larvæ feed on the lettuce-tree, pupal stage from 7 to 19 days.
The larva spins no silk whatever, but buries itself under the fallen
leaves at the foot of the tree when ready to turn chrysalis.

Larva is light green, then light chocolate-brown; some of the larvæ
changed colour just before transformation, some quite early, when
only an inch long: out of one lot of 7 that turned pupa, 27th, 29th,
30th October, 2nd, 6th, 11th, and 12th November, they emerged
13th, 15th, 17th, 19th, 29th November, and 1st December.

6. DEILEPHILA LIVORNICA.

Sphinx livornica, Esper, Ausl. Schmett. ii. pp. 87, 196, pl. 8. f. 4
(1785).

Bombay.

7. PERGESA CASTANEA.

Pergesa castanea, Moore, P. Z. S. 1872, p. 567.

Sattara, June.

8. PERGESA ACTEUS.

Sphinx acteus, Cram. Pap. Exot. iii. p. 93, pl. 248. f. A.

Poona, January and February ; Belgaum ; Bombay.

Feeds on different kinds of *Caladium*, also feeds on *Sissus* ; larval stage about two months ; those found feeding on *Caladium* were light green, and those on *Sissus* were pink.

9. DAPHNIS NERII.

Sphinx nerii, Linn. Syst. Nat. i. 2, p. 798 (1767).

Poona, April and November ; Bombay, August to November.

These are much darker and brighter-coloured than those found in Sind ; the larvæ in Sind were invariably found feeding on Oleander, but in Poona they were usually found feeding on *Tabernamontana* and *Coronaria* ; some hatched 2nd April cast their first skin the next day, the second skin on the 7th, turned chrysalis on the 12th, and emerged in their perfect state on the 25th and 26th idem.

10. CHÆROCAMPA NESSUS.

Sphinx nessus, Drury, Ill. Exot. Ins. ii. 46, pl. 27. f. 1.

Belgaum. Bombay, September, October, and November, very plentiful. I have often found numbers lying on the ground under the electric light on Cumballa hill.

11. CHÆROCAMPA ALECTO.

Sphinx alecto, Linn. Mus. Lud. Ulr. p. 357.

Poona, February and September ; Bombay, August, September, and October.

12. CHÆROCAMPA CELERIO.

Sphinx celerio, Linn. Syst. Nat. i. 2, p. 800 (1767).

Poona, June to November ; Bombay.

Has three or four broods, one after the other ; the first lot of larvæ in June, in the height of the monsoon rains, became pupæ in 14 and 15 days, and only remained in that stage about ten days ; but the last lot, in September, are much slower in growth, and more delicate : they feed for a month, and the perfect insect does not emerge till the following June ; larvæ feed on *Caladium*.

13. CHÆROCAMPA THYELIA.

Sphinx thyelia, Linn. Mus. Lud. Ulr. p. 360.

Poona, June to November ; Bombay, August to November.

The above notes apply to the transformation of this species also.

14. CHÆROCAMPA RAFFLESII.

Chærocampa rafflesii, Butler, Trans. Zool. Soc. ix. p. 556 (1876).
Poona, November and December; Bombay, September.

15. CHÆROCAMPA OLDENLANDIÆ.

Sphinx oldenlandiæ, Fabr. Spec. Ins. ii. p. 148 (1781).
Poona, June; Belgaum; Bombay.

16. CHÆROCAMPA CLOTHO.

Sphinx clotho, Drury, Ill. Exot. Ins. ii. p. 48, pl. 28. f. 1 (1773).
Belgaum; Bombay, August to October.

17. CHÆROCAMPA GONOGRAPTA.

Chærocampa gonograptæ, Butler, P. Z. S. 1875, p. 249.
Poona, March and July; Belgaum; Bombay, July, August, and
September.

I received one chrysalis from Poona on the 4th November, 1882,
which had then turned only a day or two, and the perfect insect did
not emerge till 4th April 1883.

18. CHÆROCAMPA PUNCTIVENATA.

Chærocampa punctivenata, Butler, P. Z. S. 1875, p. 248.
Bombay, July and August.

19. CHÆROCAMPA LUCASII.

Deilephila lucasii, Walker, viii. 141.
Bombay, September, October, and November.

20. PROTOPARCE ORIENTALIS.

Protoparce orientalis, Butler, Trans. Ent. Soc. ix. p. 609 (1876).
Poona, June, August, September, and October; Bombay,
September and October.

The larvæ feed on *Coliæ*, length $3\frac{1}{2}$ inches, colour dark greenish-
olive, with seven dark reddish-brown stripes, with small ocelli between
the stripes, each ocellus with a black eye; the skin has a leather-like
appearance, with an absence of the beautiful shades of colour usual
with the larvæ of sphinges; the pupa is dark brown, with a looped
proboscis like the pupa of *Pergesa acteus*.

Larval stage 28 to 30 days, pupal stage 16 days.

21. DILUDIA VATES.

Diludia vates, Butler, P. Z. S. 1875, p. 13.
Poona; Bombay, August, September, and October.
The Poona specimens are very small.
Expanse of wings $2\frac{9}{10}$ and 3 inches.

22. AMBULYX TURBATA.

Ambulyx turbata, Butler, P. Z. S. 1875, p. 252.
Belgaum.

23. POLYPTYCHUS DENTATUS.

Sphinx dentata, Cram. Pap. Exot. ii. 42, pl. 125. f. G.

Poona, December; Belgaum; Bombay, October and November.

Larvæ feed on *Cordia augustifolia*; when full-grown measured $4\frac{1}{2}$ inches, colour green, with ochreous stripes; one moth emerged in 26 days, in July, and two of another brood in December took 63 days in the pupal stage.

24. ACHERONTIA MORTA.

Acherontia morta, Hübn. Verz. Schmett. p. 140, 1496.

Poona, June and August; Bombay, August and September.

25. ACHERONTIA STYX.

Acherontia styx, Westwood, Cab. Orient. Ent. 88, pl. 42. f. 3.

Poona, September; Bombay, September and October.

The larvæ of both the above feed on potato, jasmine, *Erythrina indica*, *Datura*, and *Colea*; the larvæ, when disturbed, make the same peculiar clicking noise the moth does; they average in length from 4 to $5\frac{1}{2}$ inches; larval stage 28 days, pupal stage varies from 1 to 4 months. They vary much in colour: those fed on potato were bright canary-yellow, with seven violet stripes, those fed on the other plants named were of the usual green colour with purple stripes bordered with yellow; but there was no visible difference in the moths as to sex, colour, or size, whether they came from the yellow caterpillars or from the green ones.

ZYGÆNIDÆ.

26. EUCHROMIA POLYMENA.

Sphinx polymena, Linn. Syst. Nat. ii. p. 806, 40.

Bombay, September.

27. SYNTOMIS EXTENSA.

Syntomis extensa, Walker, xxxv. 1863.

Matheran, May.

28. SYNTOMIS CUPREIPENNIS.

Syntomis cupreipennis, Butler, Journ. Linn. Soc. xii. p. 347.

Poona, July and October.

29. SYNTOMIS PASSALIS.

Zygæna passalis, Fabr. Sp. Ins. ii. 159, 11.

Poona, May, October, and November.

30. SYNTOMIS MONTANA.

Syntomis montana, Butler, Journ. Linn. Soc. xii. p. 349.

Poona, September and October.

31. ERESSA MUSA, n. sp. (Plate XX. fig. 1.)

Bombay, February.

Allied to *Eressa confinis*, Walker. Smoky brown, a gold spot

front on the thorax, a central row of gold spots on the abdomen, one on each segment; fore wings with an interior hyaline band divided into four by the veins, first within the cell and gradually widening to the hinder margin, and an outer band of the same kind divided by the veins into five parts, commencing at the costa and terminating on the second median nervule, the subcostal spot much the smallest. Hind wings with a central hyaline patch, divided into five parts by the veins. Underside, wings, body, and legs smoky brown.

Expanse of wings $1\frac{4}{10}$ inch.

32. *DYSAUXES INDICA*.

Dysauxes indica, Moore, P. Z. S. 1879, p. 390.

Bombay, July.

DEBOS, gen. nov.

Male: fore wing elongated, narrow, costa slightly arched at the base, apex hardly acute, exterior margin slightly oblique, posterior margin slightly convex towards the base; cell extending two thirds of the length; subcostals at equal distances apart, first branch emitted at nearly one fourth before end of cell, second forked at one half its length, fourth forked at three fifths; discocellular bent; radials from the angles, a short slender discoidal veinlet emitted within the cell from the middle; the middle median from angle close to end of the cell, lower at one fifth before the end; submedian straight. Hind wing rather long, narrow; exterior margin very oblique, recurved, abdominal margin fringed, cell extending half the length; costal vein straight, forked at three fifths its length; two subcostals on a foot-stalk one fourth beyond the cell; discocellular outwardly oblique, convex, radial from the middle, a slender discoidal veinlet emitted within the cell; two upper medians from end of the cell, lower at one third; submedian and internal vein straight. Body short, moderately stout; top of head laxly clothed; abdomen slightly tufted at the apex; palpi obliquely ascending, slender, cylindrical, laxly squamose, not reaching to level of the eyes, third joint short, pointed; antennæ recurved from the base, broadly pectinated on one side only, the branches also ciliated and broadest in the middle, minutely ciliated on the other side towards the base; legs moderately stout, femora and tibiæ laxly squamose, middle tibiæ with two, and hind tibiæ with four short spurs.

33. *DEBOS IRATUS*, n. sp. (Plate XX. fig. 7.)

♂, above, head, fore part of thorax and antennæ chrome-yellow, branches of antennæ reddish, remainder of body and both wings pale purple-brown, quite unmarked. Underside, wings of same colour, with some blackish marks in the outer spaces near the apex of fore wings; palpi, body, and legs reddish.

Expanse of wings $1\frac{9}{10}$ inch.

AGARISTIDÆ.

34. EUSEMIA AFFLICTA.

Eusemia afflictata, Butler, Ann. Nat. Hist. 1875, p. 118.
Poona, June and September.

35. EUSEMIA CONTRACTA.

Eusemia contracta, Butler, Ent. Mo. Mag. 1875, p. 117.
Belgaum.

36. ÆGOCERA VENULIA.

Phalena venulia, Cram. Pap. Exot. ii. 107, pl. 165. f. D.
Poona, September.

CHALCOSIIDÆ.

37. CHALCOSIA AFFINIS.

Gynantocera affinis, Guér. Voy. Delessert, Hist. Nat. p. 86, pl. 24.
f. 2.
Belgaum.

NYCTEMERIDÆ.

38. NYCTEMERA LACTILINEA.

Phalæna geometra lactilinea, Cram. Pap. Exot. ii. 47, pl. 128.
f. E.
Belgaum.

LITHOSIIDÆ.

39. LACIDES FICUS.

Noctua ficus, Fabr. Ent. Syst. iii. pp. 27-62.
Poona, February and August; Belgaum; Mahableshwur;
Bombay, August to November.

40. DANALIS ALCIPHRON.

Noctua alciphron, Cram. Pap. Exot. ii. p. 58, pl. 133. f. E.
Bombay, August to November. Very plentiful.

41. DAMALIS STRIGIVENATA.

Damalis strigivenata, Butler, Trans. Ent. Soc. 1875, p. 321.
Poona; Belgaum; Bombay, October and November.

42. DAMALIS SERICEA.

Hypsa sericea, Moore, P. Z. S. 1878, p. 3.
Poona, November; Bombay.

Larvæ of all the above four species feed on *Ficus religiosa* and several other kinds of *Ficus*; larvæ change their skins twice at 8 days' interval from the date of hatching, length about $1\frac{3}{4}$ in.; they very much resemble each other, but the larva of *L. ficus* can be distinguished by a yellow spot on the side, rather in rear of the centre; they are regular night-feeders, hiding on the lower sides of the leaves in the body of the trees during the daytime; they make a cocoon

in the crevices of the bark of the tree or in the crevices at the roots, using the bark and weaving it with the silk, not cementing it, and the moth invariably emerges just before sunset, so that they may be able to get on the wing by nightfall; they are never on the wing in daylight; they are much sought after by lizards and by bats; the caterpillars are quite common at Poona on the *Ficus religiosa*. Out of thirty reared by Mr. Taplin every moth emerged between 4.30 and 5 P.M.

43. CRAMBOMORPHA ENTELLA.

Phalæna tineæ entella, Cram. Pap. Exot. iii. p. 27, pl. 208. f. D.
Bombay, September, October, and November. Common.

44. DIGAMA HEARSEYANA.

Digama hearseyana, Moore, Cat. Lep. Mus. E. I. C. pt. ii. p. 298, pl. vii a, 6, figs. 3, 3a.

Poona, February; Bombay.

45. BRUNIA CHOTA, n. sp. (Plate XX. fig. 11.)

Fore wings pale lilacine ochreous-brown; hind wings paler and of a duller tint. Body, palpi, and legs pale lilacine ochreous-brown. Expanse $\frac{6}{10}$ inch.
Poona, October.

46. BIZONE PUELLA.

Phalæna noctua puella, Drury, Exot. Ins. ii. p. 3, pl. 2. f. 2.
Bombay, October and November.

47. ÆMENE TAPROBANIS.

Æmene taprobanis, Walker, ii. p. 542.
Poona; Belgaum; Bombay, November.

48. ÆMENE TENEBROSA.

Æmene tenebrosa, Moore, P. Z. S. 1878, p. 34.

49. BARSINE RUBRICOSA.

Lycæna rubricosa, Moore, P. Z. S. 1878, p. 30, pl. 3. f. 1.
Bombay, August, October, and November.

50. NEPITA ANILA.

Nepita anila, Moore, Cat. Lep. Mus. E. I. C. part ii. p. 302.
Poona, August; Bombay, July, August, and September.

50 a. NEPITA SEMIFASCIA.

Setina semifascia, Walker, ii. p. 521.
Bombay.

50 b. RÆSELIA PASCUA, n. sp. (Plate XX. fig. 6.)

Poona, October; Bombay, September.

Pure white above, fore wings with some brown markings on the

costa, two largish brown patches also on the costa, one before the middle and the other on the middle; an outward double sinuous line curving inwardly at its centre, a submarginal, and a marginal diffused incomplete brownish-grey band; hind wings unmarked, fringe grey; underside white, with some smoky grey coloration near the costa and apex of the fore wings.

Expanse of wings $\frac{6}{10}$ inch.

51. DEIOPEIA PULCHELLA.

Tinea pulchella, Linn. Syst. Nat. i. 2, p. 884, 349.

Poona, October to January; Bombay, October and November.

52. DEIOPEIA PULCHELLA, var. LOTRIX.

Phalena lotrix, Cram. Pap. Exot. ii. 20, pl. 109. f. E.

Poona, July.

53. ARGINA SYRINGA.

Phalena syringa, Cram. Pap. Exot. i. 8, pl. 5. figs. C. D.

Mahableshwur, May; Belgaum.

54. ARGINA DULCIS.

Deiopeia dulcis, Walker, ii. p. 569.

Poona, November; Sattara, November; Belgaum; Bombay.

55. ARGINA ASTREA.

Phalena noctua astrea, Drury, Ins. Exot. ii. p. 11, pl. 6. fig. 3.

Phalena cribraria, ♀, Cram. Pap. Exot. iii. pl. 208. f. G.

Poona, October; Sattara, November; Ahmednugger, October and November; Mahableshwur, May; Bombay, August to December. Very common.

56. ARGINA ASTREA, var. CRIBRARIA.

Argina cribraria, Clerck Scones, pl. 54. f. 4.

Poona, September; Bombay, October.

57. ARGINA ASTREA, var. NOTATA.

Argina notata, Butler, Trans. Ent. Soc. pl. iv. p. 365 (1877).

Belgaum; Bombay, August.

58. ARGINA ASTREA, var. GUTTATA.

Xanthestes guttata, Rambur, Faune de l'Andalousie, ii. p. 229.

Bombay, October.

ARCTIIDÆ.

59. RHODOGASTRA FRATERNA.

Rhodogastra fraterna, Moore, Trans. Ent. Soc. 1884, p. 356.

Poona, November; Bombay, October and November.

60. SPILARCTIA CONFUSA.

Spilarctia confusa, Butler, Ill. Typ. Lep. Het. B. M. pl. 85. f. 13.

Bombay, September, October, and November.

61. SPILARCTIA QUADRIRAMOSA.

Euprepia quadriramosa, Kollar, in Hügel's Kaschmir, 468, 6. Sattara, November.

62. SPILOSOMA MONA, n. sp. (Plate XX. figs. 3 ♂, 4 ♀.)

Mahableshwur, May.

♂ ♀. Pale yellowish testaceous, hind wing lighter than the fore wing; abdomen deep chrome-yellow, with a line of black spots down the centre, on each segment, beneath, wings and body paler yellowish testaceous; coxæ bright crimson above, tibiæ black above, both pale testaceous beneath; tarsi deep black; fore wings above with three rows of black dots placed in pairs, first row before the middle, which in the male is composed of only three dots and in the female of six; second beyond the middle, third submarginal.

Hind wing with the entire cell black in the female, black only at its end in the male, and with a discal and submarginal black macular band, the latter the deeper, and both bands deeper and more regular in the female than in the male; underside, all the wings with the cells black, the male having the black only at the end of the cell in the hind wing, and with two wavy, black, deep macular bands across both wings, the first medial, the second discal.

Expanse of wings $1\frac{8}{10}$ inch.

63. ALOPE RICINI.

Noctua ricini, Fabr. Ent. Syst. iii. 1, p. 473 (1793).

Poona, June, July, and August; Sattara, September; Matheran, May; Ahmednugger, November.

Larvæ feed on *Ricinus communis*; they had long brownish hairs; length $1\frac{1}{4}$ inch; larval stage 24 days; pupal stage 21 days.

64. ALOPE CLAVATUS, n. sp.

Poona, October; Mahableshwur, May; Bombay, July, September, and October.

♂ ♀. Head, thorax, and fore wings brown; fore wings crossed by several macular bands of a darker shade; hind wings and abdomen yellow, the latter with black macular bands above and below and also in the sides; hind wing with the costa and outer margin blackish brown, and with three macular bands of the same colour; below, the wings are coloured and marked exactly as above; antennæ and legs blackish brown, the latter with the knees and tips yellow.

Expanse of wings, ♂ $1\frac{7}{10}$ inch, ♀ $2\frac{3}{10}$ inch.

65. PHISSAMA TRANSIENS.

Spilosoma transiens, Walker, iii. 675.

Belgaum.

66. RAJENDRA KHANDALLA.

Aloa khandalla, Moore, Cat. Lep. Mus. E. I. C. ii. p. 361, pl. ix a.
f. 13.

Bombay, September.

67. RAJENDRA BIGUTTATA.

Aloa biguttata, Walker, iii. 707.

Belgaum ; Bombay, August, September, and October.

68. CREATONOTUS INTERRUPTUS.

Phalæna interrupta, Linn. Syst. Nat. 116.

Ahmednugger ; Bombay, August to November.

69. ALOA SANGUINOLENTA.

Bombyx sanguinolenta, Fabr. Ent. Syst. iii. 1, 473, 206.

Bombay, August to November.

Larvæ feed on *Ricinus communis* ; they are very hairy and are $1\frac{1}{2}$ inch in length ; the pupa closely resembles the pupa of *Alope ricini*.

70. ALOA MOOREI.

Areas moorei, Butler, Cist. Ent. ii. 23.

Bombay, September.

71. ALOA PUNCTISTRIGA.

Spilosoma punctistriga, Walker, iii. 676.

Bombay, August.

72. ALOA EMITTENS.

Creatonotus emittens, Walker, iii. 638.

Poona, August to October ; Belgaum ; Sattara, June ; Bombay, August to November.

73. ALOA FLORA, n. sp. (Plate XX. fig. 5.)

Bombay, November.

♀. Upper side, fore wing pale rosy testaceous, with a small black spot at the lower end of the cell and some black irrorations in the median nervure ; hind wings pure white, unmarked ; under-side, fore wings very pale, basal two thirds of costa vermilion ; hind wings pure white ; thorax above same colour as fore wings, abdomen vermilion, with a row of black points between the segments down the centre ; body beneath and legs pale testaceous ; antennæ black above, testaceous beneath.

Expanse of wings $1\frac{1}{2}$ inch.

LIPARIDÆ.

74. *OLENE MENDOSA*.

Olene mendosa, Hübner, Samml. exot. Schmett. iii. 19, 147, f. 293, 294.

Poona, November.

75. *OLENE OLEARIA*, n. sp. (Plate XX. figs. 14 ♂, 15 ♀.)

Poona, July and December.

♂. Glossy olive-brown, whitish beneath; antennæ brown, deeply pectinated; abdomen with a whitish raised spot above the anal tuft; thorax orange in front. Fore wings with an embossed orange spot near the base; all the veins brown; with some pale longitudinal streaks in the interspaces, especially so near the apex, giving the whole wing the appearance of a mass of longitudinal streaks from base to outer border, with the disk of the wing the darkest part of it. Hind wings with some few faint streaks, but altogether paler than the fore wings.

♀. Pale testaceous, with a slight reddish-yellow tinge; fore wings longitudinally streaked with brown throughout the centre of it; hind wings whitish, slightly streaked with brown in the centre. Underside paler, with a subapical longitudinal brown streak in the fore wings and the pale brown streaks in the hind wings showing through.

Expanse of wings, ♂ $1\frac{3}{10}$ inch, ♀ $1\frac{6}{10}$ inch.

76. *OLENE FUSIFORMIS*. (Plate XX. fig. 8 ♂.)

♀. *Nioda fusiformis*, Walker, v. p. 1070.

Poona, September; Bombay, November.

♂. Antennæ deeply pectinated. Antennæ, thorax, and fore wings brown; abdomen testaceous; head yellowish. Fore wings with the outer margin paler, an embossed yellowish spot at the base; basal, median, and outer thin latitudinal lines black and indistinct, first nearly straight, second curved inwardly, third sinuous and toothed; hind wings whitish. Underside whitish, darkest towards the centre of the fore wings.

Expanse of wings $1\frac{4}{10}$ inch.

At Poona Mr. Taplin took the larvæ on *Ziziphus jujuba*; Major Pitcher, Assistant Superintendent of Agriculture N. W. P., sent me some he found feeding on imported New Orleans cotton-plants; the Poona larvæ were 25 days feeding and became from 1 to $1\frac{1}{4}$ inch in length before turning; pupal stage 9 to 15 days.

77. *PORTHESIA MARGINALIS*.

Euproctis marginalis, Walker, vii. p. 1731.

Poona, September to April, very common.

78. *EUPROCTIS DECUSSATA*.

Euproctis decussata, Moore, Ann. & Mag. Nat. Hist. 1877, p. 437.

Poona, February; Bombay, September and December.

79. EUPROCTIS LUNATA.

Euproctis lunata, Walker, iv. p. 837, vii. p. 1731.

Poona, September and November.

80. EUPROCTIS VITELLINA.

Liparis vitellina, Kollar, Kaschmir von Hügel, pp. 471-4.

Sattara, November.

81. EUPROCTIS POSTICA.

Euproctis postica, Walker, xxxii. p. 348.

Poona, March; Bombay, September and October, very plentiful.

82. PERINA BASALIS.

Perina basalis, Walker, iv. p. 966.

Poona, October; Belgaum; Bombay, September, October, and November.

Larvæ feed on *Ficus indicus* and *F. religiosa*. The male has the outer two thirds of the fore wing hyaline, the base mouse-colour, hind wings mouse-colour with a large hyaline spot on the external angle. The larvæ and pupæ are very brilliantly coloured. The insect is very plentiful in Poona, where I reared a large number.

83. ARTAXA LEITHIANA.

Artaxa leithiana, Moore, P. Z. S. 1874, p. 399, pl. 32. f. 9.

Poona, July; Bombay, September, very plentiful.

A variable insect: varies in coloration from deep yellow to nearly white, and the macular median band is sometimes regular from costa to hinder margin, and is sometimes only represented by one or two spots.

84. ARTAXA VARIANS.

Artaxa varians, Walker, iv. p. 796.

Poona; Bombay, September.

85. ARTAXA BRÉVIVITTA.

Artaxa brevivitta, Moore, P. Z. S. 1879, p. 400, pl. 32. f. 10.

Poona.

86. ARTAXA FRATERNA.

Artaxa fraterna, Moore, Lep. of Ceylon, ii. p. 85.

Poona; Bombay, August to November.

87. ARTAXA SCINTILLANS.

Somema scintillans, Walker, vii. p. 1734.

Poona, October and November; Bombay, October, November, and December.

88. *AROASAGRARA*, n. sp. (Plate XX. fig. 13 ♂.)

Belgaum.

♂. Chocolate-brown, paler, with a tinge of yellow beneath; head above dark brown, palpi and cilia pale rosy brown above and beneath; with the outer third of wings dark, caused by all the outer veins being darker than the general colour.

Expanse of wings $1\frac{3}{10}$ inch.

89. *AROASCLARA*, n. sp. (Plate XX. figs. 9 ♂, 10 ♀.)

Bombay, September and October.

Allied to *Aroa pyrrhochroma*, Walker. ♂: chestnut red, outer half of fore wings and outer third of hind wings smoky black, as are also the deeply pectinated antennæ; fringe red; head, body, and legs chestnut-red; below, the wings are the same as they are above. ♀: antennæ ciliated; body thick, cylindrical, extending somewhat beyond the wings; wings very slightly clothed, semidiaphanous; head, body, legs, and wings pale reddish; quite unmarked.

Expanse of wings, ♂ $1\frac{1}{10}$, ♀ $1\frac{3}{10}$ inch.

90. *LÆLIA PALLIDA*.

Lælia pallida, Moore, Trans. Ent. Soc. 1884, p. 358.

Bombay, October.

91. *CHARNIDAS TESTACEA*.

Cyenia testacea, Walker, iii. p. 683.

Bombay, November.

92. *CHARNIDAS ROTUNDATA*.

Lacida rotundata, Walker, iv. p. 802.

Poona, July and October.

93. *GYNÆPHORA XERAMPHELINA*, n. sp. (Plate XXI. figs. 8 ♂, 9 ♀.)

Poona, September and October.

♂ pale reddish brown, clearer and redder beneath; antennæ deeply pectinated beneath. ♀ pale brown, with no reddish in the coloration, and with the abdomen thick and extending for one third beyond the wings. ♂ ♀, fore wings with a diffuse lunular brown mark at the end of the cell, basal half of wing suffused with brown, outer nervules of the same colour, with a brown, suffused, inwardly curved, submarginal band, ending in a small brown patch in the interno-median interspace; hind wings with a slightly darker shade towards the outer border. Underside with the discal area of all the wings slightly darker, otherwise unmarked.

Expanse of wings, ♂ $1\frac{2}{10}$, ♀ $1\frac{3}{10}$ inch.

Congeneric with and closely allied to the European *Gynæphora selenitica*.

94. ENOME AMPLA.

Enome ampla, Walker, iv. p. 883.

Poona, October.

95. ENOME INCERTA.

Lymantria incerta, Walker, iv. p. 880.

Sattara, June.

96. ENOME DETERSA. (Plate XXI. figs. 3 ♂, 4 ♀.)

Lymantria detersa, Walker, xxxii. p. 365.

Poona, October, very plentiful; Belgaum, September; Sattara, November.

As Mr. Butler stated (P. Z. S. 1883, p. 156, n. 45) that the female of this species was unknown, I got Mr. Taplin, at Poona, to pay particular attention to the subject; and by digging and hunting for pupæ at the foot and in the bark of the *Acacia arabica*, where the male moth is found in great abundance, we were successful at last; a fat pupa produced a fat black apterous grub-like moth, and round the breeding-cage Mr. Taplin that night caught over three hundred males all trying to get at this female.

Subsequently he obtained an impregnated moth and tried to rear the larvæ, but a sudden change in the weather killed them all. I was away from Poona at the time, and Mr. Taplin kept no drawings. The larvæ feed on babool (*Acacia arabica*).

I have the two pupa-cases of both the females in my collection.

This insect is very plentiful above the Ghats, but I never observed it in Bombay. Walker's type came from N. India, not from the Mauritius, as is stated in his work.

97. LYMANTRIA OBSOLETA.

♂. *Lymantria obsoleta*, Walker, iv. p. 880.

Poona, February and September; Matheran, May; Bombay, October.

The female is very much larger than the male, expanse of wings being, ♂ $1\frac{6}{10}$, ♀ $2\frac{6}{10}$ inch; the coloration and markings are similar. Walker's type must, however, have been a faded specimen, because the abdomen in both sexes, when fresh, is of a deep pinkish red, and not of a slight rosy tinge as described by him; the basal portion of the hind wings is also rosy, and sometimes nearly the whole of the hind wing is of that colour.

The larvæ feed on *Ficus indicus*; they turn pupæ at the foot of the tree, the pupæ being always found suspended in a net like the pupæ of *Perina basalis*.

98. LYMANTRIA FULIGINOSA.

Lymantria fuliginosa, Moore, P. Z. S. 1883, p. 17.

Bombay, August to December, very common.

NOTODONTIDÆ.

99. STAUIROPUS ALBESCENS.

Stauropus albescens, Moore, P. Z. S. 1879, p. 404.

Bombay, December.

100. ICHTHYURA RESTITURA.

Ichthyura restituta, Walker, xxxii. p. 433.

Poona, December.

Much paler than the type; it varies, however, much in colour. I have both dark and very pale forms from Subathoo.

101. BRADA TRUNCATA.

Brada truncata, Walker, xv. p. 1666.

Poona, December; Bombay.

102. ARSACIA FRONTIRUFA, n. sp. (Plate XX. fig. 12.)

Bombay, November.

♂. Antennæ, palpi, head, and thorax rufous; eyes black; abdomen testaceous, with a longish anal tuft. Fore wing chocolate-brown, with the apex pale and the hinder margin broadly black, a whitish line bordered inwardly with brown from the centre of the hinder margin to the costa near the apex; costa reddish. Hind wing testaceous, basal portion palest. Underside: wings of a uniform smoky testaceous colour; body and legs pale reddish white.

Expanse of wings $\frac{7}{10}$ inch.

103. ORÆSIA EMARGINATA.

Noctua emarginata, Fabr. Ent. Syst. iii. 2, p. 240.

Poona, October; Bombay, July to November.

104. CULASTA INDECISA.

Culasta indecisa, Moore, P. Z. S. 1881, p. 377.

Sattara, November; Bombay, July to December.

105. BEARA DICHROMELLA.

Beara dichromella, Walker, xxxv. p. 1703.

Bombay, September.

106. HARPYIA KANDYIA.

Harpypia kandyia, Moore, Lep. Ceylon, ii. p. 108, pl. 120. figs. 1-1a.

Bombay, December.

107. ANTHEUA DISCALIS.

Antheua discalis, Walker, iii. p. 767.

Kurjut (Khandala Ghats), June; Bombay, July, August, and September.

108. *CORMA ERNESTINA*, n. sp. (Plate XX. fig. 2 ♂.)

Bombay, August and September.

♂ ♀. Antennæ, head, thorax, and fore wings brownish grey, with a faint flesh-coloured tinge. A brownish streak along the subcostal nervure; another along the medial nervure, and another along the hinder margin; hind wings and abdomen greyish white, cilia white; underside paler, unmarked; the hind wings and body pure white.

Expanse of wings $2\frac{1}{10}$ inches.

109. *PHALERA BOBI*, n. sp. (Plate XXI. fig. 6.)

Bombay, September.

Allied to *Phalera raya*, Moore, from Darjiling. Fore wing glistening greyish brown, marked very much as in *P. raya*, but there is a deep black band on the basal third of the hinder margin, and the outer double sinuous line from the apical patch blackens into a diffused patch on the hinder margin; eyes and fore part of the head deep black, top of the head yellowish white; antennæ and thorax dark brown; sides of the thorax white; abdomen yellowish, with brown bands on each segment; hind wing above and both wings below soot-brown.

Expanse of wings $4\frac{3}{10}$ inches.

BOMBYCIDÆ.

110. *TRILOCHA VARIANS*.

Naprepa varians, Walker, vii. p. 1153.

Poona, August; Sattara, June; Bombay, September to December.

The male is yellowish fawn-colour; Mr. Moore's drawing in pl. xi. A. f. 6, vol. ii. Cat. Lep. Mus. E. I. C., fairly represents the markings of this sex; but the general coloration is too dark; the female is pale mouse-colour with a slight reddish tint on the hind wings, the markings showing very faintly, often quite obsolete.

111. *THIACIDES POSTICA*. (Plate XXI. figs. 1, 1a larva, 2 ♀.)

Thiacides postica, Walker, v. p. 1028.

Bombay, September to November, common.

Larva feed on *Ricinus communis*; the larva covered the walls of my garden in October; I put a number into a breeding-cage; two turned into pupæ on the 24th idem, and the moths emerged on the 20th December following; all the other larvæ hybernated at the end of October, and I took them on board ship in that state on the 6th of March following; but the cold in the Red Sea killed them all.

LIMACODIDÆ.

112. *NATADA VELUTINA*.

Gastroparcha velutina, Kollar, Kasch. von Hügel, p. 473, 3.

Poona, July.

113. NATADA BASALIS.

Natada basalis, Walker, v. p. 1110.

Bombay, July.

114. PARASA LEPIDA.

Phalæna-noctua lepida, Cramer, Pap. Exot. ii. p. 50, pl. 130. f. E (1779).

Bombay, October.

115. APHENDALA CANA.

Parasa cana, Walker, xxxii. p. 484.

Poona, June, July, and October.

116. CANDYBA PUNCTATA.

Candyba punctata, Walker, vii. p. 1761.

Belgoræa subnotata, Walker, xxxii. p. 497.

Poona.

LASIOCAMPIDÆ.

117. EUPTEROTE GYRA, n. sp.

Belgaum.

Allied to *E. mutans*, Walker.

♂ of the same yellow colour, the internal bands are less toothed, and the outer double straight band, instead of being composed of two thin lines, is composed of one broad purple band and of a faint indication of a duplicate thin line. Underside is altogether different, having a suffused broad purple band on the costa of both wings, and a broad discal purple band across both wings in addition to the usual markings.

Expanse of wings $4\frac{2}{10}$ inches.

118. EUPTEROTE UNDATA.

Bombyx undatus, Blanchard, Jacq. Voy. dans l'Inde, Zool. Ins. p. 23, pl. 1. f. 8 (1844).

Poona, July; Belgaum; Khandala, April.

Larvæ feed on *Dracæna ferrea*, *Acalypha emarginata*, and *Graptophyllum hortensis*; they cast their skins every 8 or 9 days for the first 80 days, getting darker each time—larval stage 120 days; they are night-feeders, are very hairy, and require very careful handling; their hairs run into the skin and cause great irritation.

119. EUPTEROTE DIABOLICA, n. sp.

Belgaum.

♂ dark brown, with the markings above and below as in the pale yellow *E. mutans*, Walker.

Expanse of wings $4\frac{6}{10}$ inches.

120. EUPTEROTE DISCREPANS.

♂ *Tagora discrepans*, Moore, Trans. Ent. Soc. 1884, p. 360.

Bombay, August to September.

♀ has the entire surface of both wings diffused with reddish, the space beyond the discal line being so dark as to form a deep marginal band; the antennæ, head, thorax, abdomen above and below, and all the legs are dull yellowish red.

Expanse of wings 4 inches.

121. EUPTEROTE UNDANS.

Dreata undans, Walker, iv. p. 905.

Mahableshwur, May.

122. EUPTEROTE SIMILIS.

Eupterote similis, Moore, Trans. Ent. Soc. 1884, p. 369.

Poona, June.

123. EUPTEROTE MOLLIS.

Eupterote mollis, Moore, Trans. Ent. Soc. 1884, p. 367.

Bombay, August to September.

A very pretty local species. I have never met with it except in Bombay, where it is very plentiful; I have seen the ground under the great electric light on the Malabar Hill covered with them at night.

124. MESSATA TRANSLATA, n. sp. (Plate XXI. fig. 5 ♂.)

Sattara, June.

♂ reddish yellow, fore wings with four latitudinal straight bands across the wings, composed of brown raised atoms—inner, central, outer, and submarginal; hind wings with only two bands, central and outer; underside paler and unmarked.

♀ dull red, fore wings with an outer band; hind wings with a central band and a faint indication of an outer band.

Expanse of wings, ♂ $2\frac{2}{10}$ inches, ♀ $4\frac{2}{10}$ inches.

125. MESSATA CASTANOPTERA.

♂ *Messata castanoptera*, Moore, Trans. Ent. Soc. 1884, p. 372.

Poona, September and October; Belgaum, September.

The female is of a deep pinkish-brown colour, fore wings with one postmedial line; hind wings with one medial line and in some specimens a faint indication of postmedial line. It is a common insect in Poona.

Expanse of wings $2\frac{6}{10}$ inches.

126. SANGATISSA CITRINULA.

Dreata citrinula, Walker, xxxii. p. 376.

Sattara.

127. NISAGA SIMPLEX.

Nisaga simplex, Walker, iv. p. 885.

Sattara, June.

The female in this genus only differs from the male in having very slightly narrower fore wings, and antennæ perhaps a little less deeply pectinated; but the difference, if any, is very little.

128. NISAGA MODESTA.

Nisaga modesta, Moore, Trans. Ent. Soc. 1884, p. 373.

Bombay, August; Sattara, June; Poona, April.

Both the above appear in great quantities at a time.

129. TRABALA VISHNU.

♀. *Gastropacha vishnu*, Lefebvre, Zool. Journ. iii. p. 207 (1827).

♂. *Amydona prasina*, Walker, vi. p. 1417.

Bombay, March and August.

130. LENODORA VITTATA.

Lasiocampa vittata, Walker, vi. p. 1440.

Poona, November.

131. TARAGAMA GANESA.

♂. *Bombyx ganesa*, Lefebvre, Zool. Journ. iii. p. 211 (1827).

♀. *Bombyx siva*, l. c. p. 210.

Poona, July, November, and December.

Larvæ feed on *Acacia arabica*, $3\frac{1}{4}$ inches in length, very hairy, with down quite close to the skin; colour grey; night-feeders, hide during the day in crevices in the bark of the tree; larval stage 50 to 56 days; spins on the twig of some low bush near the foot of its food-tree or on a neighbouring wall, apparently never in the tree itself; pupal stage 21 to 24 days.

132. TRISULA VARIEGATA. (Plate XXI. fig. 7, pupa.)

Trisula variegata, Moore, Cat. Lep. Mus. E. I. C. ii. p. 420, pl. xii a. f. 1.

Poona, October; Bombay, October to December.

Two fully-grown larvæ were reared by me on the castor-oil plant; left off eating on the 4th October, 1883; one turned pupa on the 25th of the following month, and the imago emerged on the 22nd December, 1883; the other caterpillar hibernated and lost all its hairs after spinning a delicate slight cocoon; in this state I brought the insect home from Bombay, looking at it once a fortnight, for which purpose I cut off one end of the cocoon, and kept it covered with cotton; and though rather shrivelled, it was quite lively, and in this state the larva remained until last September, when it turned into a healthy

chrysalis, which is still alive in my possession ; it will thus be seen that this larva actually remained alive and healthy for eleven months without food, before becoming a chrysalis.

133. LEBEDA BUDDHA.

♂ . *Bombyx buddha*, Lefebvre, Zool. Journ. iii. p. 209 (1827).

♀ . *Bombyx brahma*, l. c. p. 208.

Bombay, July.

134. ESTIGENA NANDINA.

Estigena nandina, Moore, Cat. Lep. Mus. E. I. C. ii. p. 427.

Bombay, November.

DREPANULIDÆ.

135. ARGYRIS EXTRUSATA.

Ephyra extrusata, Walker, xxii. p. 637.

Poona, July and October ; Bombay, November.

SATURNIIDÆ.

136. ACTIAS SELENE.

Actias selene, Macleay, Zool. Misc. ii. pl. 70.

Belgaum.

137. ATTACUS ATLAS.

Phalæna bombyx Attacus atlas, Linn. Syst. Nat. 808, 1.

Belgaum, October.

138. ANTHERÆA NEBULOSA.

Antheræa nebulosa, Hutton, Journ. As. Soc. Bengal, 1869,
p. 16.

Poona, September ; Bombay, July to November.

139. ANTHERÆA OLIVACEA.

Antheræa olivacea, Moore, Monograph Saturnidæ, MS

Poona ; Sattara.

COSSIDÆ.

140. BRACHYLIA ACRONYCTOIDES.

Brachylia acronyctoides, Moore, P. Z. S. 1879, p. 411, pl. 34.
fig. 4.

Bombay.

141. ARBELA TETRAONIS.

Arbela tetraonis, Moore, P. Z. S. 1879, p. 411, pl. 34. fig. 3.

Poona, May and July.

Although Mr. Moore has described the male, he has figured a female; the abdomen of the male is thin, not more than $1\frac{1}{10}$ in diameter, being about half the diameter of the female; it has a long anal tuft, more than half the length of the abdomen, and the length of the antennæ of both sexes is proportionally equal, being more than half the length of the abdomen.

Expanse of wings, ♂ $1\frac{4}{10}$ inch, ♀ 2 inches, as represented in the Plate, which is an excellent representation of the female except for the short antennæ. It is not an uncommon insect in Poona.

HEPIALIDÆ.

142. PHASSUS SALSETTENSIS.

Phassus salsettensis, Moore, P. Z. S. 1879, p. 412, pl. 34. fig. 5.

Poona, July.

EXPLANATION OF THE PLATES.

PLATE XX.

- Fig. 1. *Eressa musa*, p. 290.
 2. *Corma ernestina*, ♂, p. 302.
 3. *Spilosoma mona*, ♂, p. 295.
 4. ———, ♀.
 5. *Aloa flora*, p. 296.
 6. *Ræschia pascua*, p. 293.
 7. *Debos iratus*, p. 291.
 8. *Olene fusiformis*, ♂, p. 297.

- Fig. 9. *Aroa clara*, ♂, p. 299.
 10. ———, ♀.
 11. *Brunia chota*, p. 293.
 12. *Arsacia frontirufa*, p. 301.
 13. *Aroa sugrara*, ♂, p. 299.
 14. *Olene olearia*, ♂, p. 297.
 15. ———, ♀.

PLATE XXI.

- Fig. 1, 1 a. *Thiacides postica*, larva and pupa, p. 302.
 2. ———, ♀.
 3. *Enome detera*, ♂, p. 300.
 4. ———, ♀.
 5. *Messata translata*, ♂, p. 304.
 6. *Phalera bobi*, p. 302.
 7. *Trisula variegata*, pupa, p. 305.
 8. *Gynæphora xerampelina*, ♂, p. 299.
 9. ———, ♀.